Install of Globus Connect Server

Introduction

The aimsdtn system is a small cluster of four servers used to serve up Climate Storage System (CSS) data to the Earth System Grid Foundation (ESGF) community. The system is part of the Lawrence Livermore National Laboratory (LLNL) Analytics, Informatics, and Management Systems (AIMS) project.

The four Intel Xeon-based servers consist of one management node and three data transfer nodes (DTNs) running the Tri-lab Operating System Software (TOSS) version 2.3-3, a close variant of RedHat Enterprise Linux (RHEL) version 6.6. The DTN nodes use the Globus Connect Server (GCS) software to make CSS data available. Below are the general steps taken to install the Globus software.

Software Install

1. Install the OS on the nodes with at least a “Base” image. (Not documented here)
    1. Installed TOSS 2.3-3 with Base and LLNL yum groups
2. Install the latest stable Globus repo
    1. `[root@aimsdtn4:~]# yum -y install http://toolkit.globus.org/ftppub/globus-connect-server/globus-connect-server-repo-latest.noarch.rpm`
3. Install dependencies
    1. `[root@aimsdtn4:~]# yum -y install mod_wsgi xmlsec1`
       NOTE: For these packages to be found, I had to add a RHEL repository.
4. Install Globus Connect Server (note this will install a lot of RPMs)
    1. `[root@aimsdtn4:~]# yum -y install globus-connect-server`
       NOTE: For all packages to be found, you may need to enable the RHEL EPEL repository.
5. Obtain custom RPMS to enable ESGF authentication.
    1. http://mcs.anl.gov/~lukasz/RPMS/x86_64/customgsiauthzinterface-0.2-1.x86_64.rpm
    2. http://mcs.anl.gov/~lukasz/RPMS/x86_64/globus-gaa-1.1-1.x86_64.rpm
    3. http://mcs.anl.gov/~lukasz/RPMS/x86_64/globus-adq-0.9.1-1.x86_64.rpm
    4. http://mcs.anl.gov/~lukasz/RPMS/x86_64/globus-authz-esgsaml-callout-0.2-1.x86_64.rpm
    5. http://mcs.anl.gov/~lukasz/RPMS/x86_64/globus_gss_assist-10.11-1.x86_64.rpm
6. Install extra ESGF authorization RPMs
    1. First uninstall non-ESGF-enabled RPMs
        1. `[root@aimsdtn4:~]# rpm -e --nodeps globus-gss-assist-10.13-1.el6+gt6.x86_64 globus-gss-assist-progs-10.13-1.el6+gt6.x86_64`
    2. Install the ESGF RPMs
        1. `[root@aimsdtn4:~]# yum -y install customgsiauthzinterface-0.2-1.x86_64.rpm \ globus-gaa-1.1-1.x86_64.rpm \ globus-adq-0.9.1-1.x86_64.rpm \ globus-authz-esgsaml-callout-0.2-1.x86_64.rpm \ globus_gss_assist-10.11-1.x86_64.rpm`
7. Configure the following files:
    1. `/etc/globus-connect-server.conf`
        1. Under “[Globus]” section:
            1. `User = <Globus username>`
            2. `Password = <Globus password>`
        2. Under "[Endpoint]" section:

1. Name = <Your endpoint name>
2. Public = True
   NOTE: This may be set to False until ready for production use.

3. Under "[GridFTP]" section:
   1. RestrictPaths = <Set Read/Write access to relevant directories here>
4. Under "[MyProxy]" section:
   1. Server = <Enter the fully qualified domain name (FQDN) of your myproxy server>

2. /etc/grid-security/esgsaml_auth.conf
   1. AUTHSERVICE=https://<FQDN of myproxy server>/esg-orp/saml/soap/secure/authorizationService.htm

8. Start the server
   1. [root@aimsdtn4:~]# **globus-connect-server-setup**

Troubleshooting

- Several days of debugging were required to figure out the certificates automatically generated on install were not all correct. This was fixed by completely removing all Globus packages and files from a node and reinstalling.
- Error messages may indicate a certificate cannot be found. You may need to copy the required certificate from `/var/lib/globus-connect-server/grid-security/certificates` to `~/.globus/certificates` or (if desired system-wide) to `/etc/grid-security/certificates`.